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COMMITTEE OF EXPERTS ON THE
TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the
Transport of Dangerous Goods
(Thirteenth session,
Geneva, 7-17 July 1997,
agenda item (5 (b))

GLOBAL HARMONIZATION OF SYSTEMS OF CLASSIFICATION AND LABELLING OF CHEMICALS

Physical hazards

Cut-off limits for organic peroxide classification

Transmitted by the European Chemical Industry Council (CEFIC)

1. Introduction

During the meetings of the joint ILO/UN Working group on Harmonized classification criteria for flammability and reactivity held in 1995/1996, the classification of organic peroxides has been discussed. It was felt that organic peroxides should be assigned to a separate hazard category. The current status of the various hazard categories is given in document ST/SG/AC.10/R.547.

One aspect which needs to be resolved is the cut-off level of peroxide concentration and/or active oxygen concentration. The following two different cut-off levels are currently used. Most recommendations and guidelines use the higher cut-off level as given in the UN Recommendations, 11.3.2.1 (9th revised edition). European Union directives use the lower cut-off limit. More detailed description of this is given in documents ST/SG/AC.10/C.3/R610/Rev.1, Harmonized classification criteria for reactive substances, section 14 and Annex and ST/SG/AC.10/C.3/R.775, Harmonized Classification Criteria for Reactive Substances.

After several lengthy discussions, no agreement was achieved on the cut-off level, notwithstanding the fact that the differences of both cut-off levels are minor with respect to safety.

2. CEFIC position

In Europe, due to the existing two cut-off levels the situation occurs that organic peroxide formulations with low peroxide concentration have to be labelled for handling purposes according to the legislation of the European Union (EU) whereas labelling is not required for transport purposes according to UN and other transport modes regulations.

In practise this leads to confusion: users receive a non-dangerous good according transport regulations but the product has to labelled (already done or upon arrival) for handling purposes.

CEFIC is of the opinion that, regardless which (EU or UN) cut-off level finally will be chosen, it is of more importance that only one level is chosen for both transport and handling/workplace safety. This will avoid the confusion as described before.

3. Proposal

CEFIC proposes to use one cut-off level for the hazard category "organic peroxides" in the global harmonised classification system to avoid any confusion in labelling and hazard communication.

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COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the Transport of Dangerous Goods
(Thirteenth session,
Geneva, 7-17 July 1997,
agenda items 3 (d) and 5 (b))

Exempted organic peroxides with flammable properties

Transmitted by the European Chemical Industry Council (CEFIC)

1. Introduction

According to the UN Recommendations on the Transport of Dangerous Goods, Organic Peroxides are **not** classified in division 5.2 in two situations:

a) the active oxygen/concentration cut-off limit concentration is not exceeded (11.3.2.1) or

b) the organic peroxide is classified as type G (exempted) because no dangerous effects in all the tests prescribed in the classification flow chart are observed, and the product is thermally stable (i.e. SADT $\geq$ 60 °C).

In this proposal these organic peroxides are referred to as" Exempted Peroxides".

Because the UN classification procedure will be the basis for the global harmonized classification system, the situation of having "Exempted Peroxides" will also occur in the harmonized system.

2. Additional hazardous properties of exempted peroxides

Generally speaking, exempted peroxides are low or very low concentrated formulations of organic peroxides with a solid or liquid diluent. However, the diluent or the peroxide itself may have flammable properties. Consequently, the exempted organic peroxide has to be evaluated on having flammable properties based on the flashpoint (UN Class 3, EU */ flammable liquid, test A.9) or based on the burning rate (UN division 4.1, EU */ flammable solid, test A.10).

The outcome may be that exempted peroxides have to be classified as flammable solid or liquid.

3. Classification of exempted peroxides in other class/hazard categories

The classification of organic peroxides in Class 3 or 4.1 (transport regulations) or category flammable solid or liquid (workplace safety/handling/supply systems) may have its "down-stream" consequences.

In transport, depending on the transport mode, it may imply that exempted peroxides (i.e. diluted organic peroxides), classified in Class 3 or 4.1, are not allowed to be stowed together with organic peroxides of division 5.2 (because of segregation rules).

Another example of the problems which occurs is that according to organic peroxides storage regulations (handling/workplace safety) **no** chemicals of **other** classes or hazard categories may be stored in the organic peroxide storage facility.

CEFIC is of the opinion that the problems can be solved by classifying exempted organic peroxides having flammable properties in the hazard category Organic Peroxides (harmonization) or in Division 5.2 (transport regulations). The UN Recommendations include a justification for this proposal as the flammability hazard is already covered in the organic peroxide label (see UN 11.3.7.1, 9th revision).

4. Proposals

a) UN Recommendations

CEFIC proposes to add the following paragraph in the UN Recommendations:

Chapter 11, ninth revised version:

11.3.3.5 Organic peroxides which are exempted from classification based on either 11.3.2.1 or to the classification principles given in 11.3.3.3, but having flammable properties of class 3 or division 4.1, may be assigned to division 5.2, as ORGANIC PEROXIDE TYPE F.

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*/ *Legislation on dangerous substances - classification and labelling in the European Communities.*

Chapter 2, tenth reformatted revision (document ST/SG/AC.10/R.505/Add.1)

2.5.3.3.3 Organic peroxides which are exempted from classification based on either 2.5.3.2.1 or to the classification principles given in 2.5.3.3, but having flammable properties of Class 3 or division 4.1, may be assigned to division 5.2, as ORGANIC PEROXIDE TYPE F.

b) Global harmonization, working group on physical hazards

For the global harmonized classification and labelling system, CEFIC proposes to allow for exempted organic peroxides having flammable properties the assignment of category Organic Peroxides.